INDICATOR 3 *Trend and momentum*

MACD Explained: Signal Line, Histogram and Divergence

MACD combines trend and momentum in one indicator. It shows whether a trend is gaining or losing strength, and it's one of the most widely used tools on any chart.



What it is

MACD stands for Moving Average Convergence Divergence. It was developed by Gerald Appel in the late 1970s; the histogram was added later. It measures the gap between two exponential moving averages. When the gap widens, momentum is growing; when it narrows, momentum is fading.

How it's calculated

- **MACD line:** the 12-period EMA minus the 26-period EMA.
- **Signal line:** a 9-period EMA of the MACD line.
- **Histogram:** the MACD line minus the signal line, drawn as bars around zero.

Default settings

12, 26 and 9. They're used so widely that most traders never change them, and that's a reason to stick with them: everyone is watching the same signals.

How to read it

- **MACD above zero:** the short-term average is above the long-term one, so the trend is up. **Below zero:** the trend is down.
- **MACD above the signal line:** momentum is improving. **Below:** momentum is weakening.

- **Histogram bars growing:** momentum is accelerating. **Shrinking:** it's slowing, often before a crossover.

Three practical ways to use it

1. **Signal line crossovers.** A bullish signal occurs when the MACD line crosses above the signal line; a bearish signal when it crosses below. Crossovers above zero in an uptrend (or below zero in a downtrend) are the most reliable, because they agree with the trend.
2. **Zero line crossovers.** When MACD crosses above zero, the 12 EMA has moved above the 26 EMA. It's a slower but more solid confirmation that a new uptrend may be starting.
3. **Divergence.** If price makes a higher high but MACD makes a lower high, upward momentum is fading. Bullish divergence is the reverse. Treat divergence as a warning and wait for price to confirm.

Common mistakes

- **Trading every crossover in a sideways market.** MACD whipsaws back and forth and generates lots of false signals.
- **Forgetting the lag.** MACD is built from moving averages, so it reacts after the move has started.
- **Comparing MACD values across markets.** The numbers depend on the price level, so a MACD of 2 means very different things for a $20 stock and a $500 stock.

Works well with

- **ADX** to confirm that the market is trending.
- **RSI** for a second view on momentum and divergence.

Quick summary

- MACD shows trend direction and momentum together.
- Watch signal line crossovers, the zero line and the histogram.
- It works best in trending markets and lags in fast reversals.

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